

COURSE NAME		Diophantine equation			
Code	PMM810	Year of study	1st and 2nd year of graduate study		
Course teacher	Joško Mandić	Credits (ECTS)	5,0		
Associate teachers		Type of instruction (number of hours)	L	S	E
			30	15	
Status of the course	Required and elected	Percentage of application of e-learning	0		
COURSE DESCRIPTION					
Course objectives	The aim of the course is to acquaint students with the fundamental knowledge of the theory of Diophantine equations, and train them for the application of that knowledge in solving various tasks. Students should adopt a variety of techniques for solving Diophantine equations.				
Course enrolment requirements and entry competences required for the course	Requirements: Course passed: Introduction to Number Theory. Required competences: knowledge of different mathematical structures.				
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	The student is able to: - define Diophantine equations - explain various problems which are reduced to Diophantine equations - apply different ways of solving Diophantine equations - analyze various types of Diophantine equations				
Course content broken down in detail by weekly class schedule (syllabus)	<ul style="list-style-type: none"> <li>-Diophantine equation (2)</li> <li>- Examples of Diophantine equation (2)</li> <li>-Fermats equation (2)</li> <li>-Linear Diophantine equation 2)</li> <li>-Pells equation (2)</li> <li>-Group of units of quadratic integers (2)</li> <li>-Binary quadratic form (2)</li> <li>-Pythagorean triples. (2)</li> <li>- Equation <math>x^4+y^4=z^2</math>. (2)</li> <li>-Sums of two squares (2)</li> <li>- Sums of four squares (2)</li> <li>-Ternary quadratic form (2)</li> <li>-Lagrange theorem. (2)</li> <li>-Thue equation (2)</li> <li>- Equation <math>y^2=x^3+k</math> (2)</li> </ul>				
Format of instruction	Lectures and seminars				
Student responsibilities	Attending classes and writing seminar paper				
Screening student work (name the proportion of ECTS credits for each activity so that the total number of	Attending classes: 1 ETCS. Writing seminar paper: 1 ETCS. Oral exam: 3 ETCS.				

ECTS credits is equal to the ECTS value of the course)	
Grading and evaluating student work in class and at the final exam	Seminar paper and final oral exam
Required literature (available in the library and via other media)	Andrej Dujella, <i>Diofantske jednadžbe</i> , Zagreb 2006, script
Optional literature (at the time of submission of study programme proposal)	1.I. Niven, H.S. Zuckerman, H.L. Montgomery, <i>An Introduction to the Theory Numbers</i> , Wiley, New York, 1991. 2.K. Ireland, M. Rosen, <i>A classical introduction to modern number theory</i> , Springer, New York 1982. 3.W. Sierpinski, <i>Elementary Theory of Numbers</i> , Panstwowe wydawnictwo naukowe, Warszawa 1964
Quality assurance methods that ensure the acquisition of exit competences	Statistics of test results and student evaluation via anonymous questionnaires at the end of the course. The survey is conducted according to the rules of the University of Split.
Other (as the proposer wishes to add)	